

Sir:

Transmitted herewith for filing under 35 U.S.C. 111 and 37 CFR 1.53 is the ☐ Design ☒ Utility patent application of:

**Entitled: ADHESIVE LABEL WITH GRID FOR MICROSCOPE**

Enclosed are:

- ☒ 6 page(s) of written description, claims and abstract
- ☒ 1 sheet(s) of drawings.
- ☐ An assignment of the invention to:
- ☐ Executed declaration of the inventor(s).
- ☐ A certified copy of a \_\_\_\_\_ application. Priority is claimed if not already of record.
- ☐ A verified statement to establish small entity status under *37 CFR 1.27*.
- ☒ Preliminary Amendment.
- ☐ Information Disclosure Statement w/ \_\_\_\_\_ refs.

The filing fee has been calculated as shown below:


ITEM	AS FILED	# EXTRA	SMALL ENTITY	FULL FEE
Basic Fee			<input type="checkbox"/> Utility..... \$355.00 <input type="checkbox"/> Design..... \$160.00	<input checked="" type="checkbox"/> Utility.....\$710.00 <input type="checkbox"/> Design... \$320.00
Total Claims	7 - 20 =	0	x \$9 =	x \$18 =
Independent Claims	4 - 3 =	1	x \$40 =	x \$80 =\$80.00
Multiple Dependent Claims in Proper Form Presented			+ \$135 =	+ \$270 =
<b>TOTAL:</b>			\$	\$790.00

- ☒ A check in the amount of \$790.00 to cover the filing fee (and assignment recordation fee, if any) is enclosed.
- ☒ The Commissioner is hereby authorized to charge any additional fees associated with this communication, including patent application filing fees and processing fees under *37 CFR 1.16* and *37 CFR 1.17* or credit any overpayment to Deposit Account No. 04-1075. A duplicate copy of this paper is enclosed.

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Date: November 22, 2000

*Respectfully submitted,*

  
EVERETT G. DIEDERIKS, JR.  
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[illegible]

Page 1, between lines 34 and 35, insert --SUMMARY OF THE INVENTION--, centered.

**PRELIMINARY AMENDMENT**

**Inventor: Burke et al.**

**Page 2 of 3**

Page 1, line 37, delete "as claimed in".

Page 1, line 38, delete "claim 1".

Page 2, line 2, delete "as claimed "; and

line 2, insert --for assisting in spotting a microscope slide-- after "label".

Page 2, line 3, delete "in claim 5".

Page 2, line 5, delete "as claimed in"; and

line 5, insert --of transferring DNA samples-- after "method".

Page 2, line 6, delete "6".

Page 2, line 8, delete "as claimed in"; and

line 8, insert --of spotting a microscopic slide-- after "method".

Page 2, line 9, delete "7".

Page 2, between lines 15 and 16, insert --BRIEF DESCRIPTION OF THE  
DRAWINGS--, centered.

Page 2, line 20, delete "and"

Page 2, line 21, change "Figs. 2(a) and 2 (b) show two different labels." to

-- Fig. 2 (a) shows a first label according to the invention; and

Fig. 2 (b) shows a second label according to the invention.

DETAILED DESCRIPTION OF THE INVENTION--.

**PRELIMINARY AMENDMENT**

**Inventor: Burke et al.**

**Page 3 of 3**

**IN THE CLAIMS:**

Claim 4, line 1, delete "or 3".

**IN THE ABSTRACT**

Line 3, delete "MICROARRAY SLIDES".

Line 10, below the Abstract, delete "[Fig. 1]".

**REMARKS**

The above minor changes have been made, without the introduction of any new matter, to better present the specification and claims in uniformity with the overall invention disclosed and in conformity with U.S. practice. In any event, following entry of this Preliminary Amendment, examination of the application is respectfully requested.

Respectfully submitted,



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ADHESIVE LABEL WITH GRID FOR MICROSCOPE SLIDE

5       The present invention relates to a microscope slide in combination with a self-adhesive label for use in manual microarraying.

10       Microarraying involves the transfer of e.g. biological DNA material from a source e.g. a microtitre plate to a target e.g. a glass microscope or microarray slide. Microtitre plates holding 96, 384 or 1534 different DNA samples are known, and conventionally it is desired to accurately transfer the samples from the source onto the target in the form of small distinct and  
15       separate micro spots. Once the material has been deposited in the form of micro spots the individual samples can then be analysed.

20       The accurate transfer of material from a source to a target can be achieved by either robotic or manual spotting. For robotic transfer the configuration of the material on the source can be easily monitored and controlled by setting the robotic system to spot in pre-defined areas and in a pre-defined configuration.

25       However, for manual transfer of material, the placement of the material from the source onto the target tends to be more difficult to monitor and control. The material being transferred is often clear and thus once it is dry it can be very difficult to know  
30       where a spot has already been placed and therefore exactly where the next spot should be placed on the target.

      It is therefore desired to overcome the problems associated with conventional manual spotting techniques.

35       According to a first aspect of the present invention there is provided the combination of a microscope slide and an adhesive label as claimed in claim 1.

According to a second aspect of the present invention there is provided an adhesive label as claimed in claim 5.

5 According to a third aspect of the present invention there is provided a method as claimed in claim 6.

According to a fourth aspect of the present invention there is provided a method as claimed in claim 7.

10 According to a preferred embodiment a pre-gridded microscope slide is provided which has a pre-printed alpha-numeric grid attached to the underside of the slide. The alpha-numeric grid appears through the glass slide with the numbers and letters in the correct  
15 configuration i.e. write read up.

Various embodiments of the present invention will now be described, by way of example only, and with reference to the accompanying drawings in which:

20 Fig. 1 shows a microscope slide with a label attached thereto; and

Figs. 2(a) and 2(b) show two different labels.

With reference to Fig. 1, transfer of material onto a target microscope slide 1 is carried out from a source plate to pre-defined positions on the top surface of the  
25 glass slide 1, using a pre-printed grid 2, preferably printed on a label 3, as a guide for placement of material to be spotted. Knowing which box or cell of the grid 2 has previously been spotted enables a user to safely spot the next sample in the next available empty  
30 box or cell of the grid or array 2.

The format of the pre-printed grid 2 may vary, but a 8 x 12 array or grid corresponding with a 96 well microtitre plate format is preferred. According to such an embodiment, 96 different DNA samples can be  
35 transferred from the source microtitre plate to the target microscope slide 1 with a one to one correspondence between the two of them.

Two different embodiments of label design are shown

in Figs. 2(a) and 2(b). The labels are shown enlarged. In the embodiment shown in Fig. 2(a) each array 2 is approximately 6 mm x 4 mm i.e. each cell is approximately 0.5 mm x 0.5 mm. In the embodiment shown  
5 in Fig. 2(b) each array 2 is approximately 12 mm x 8 mm i.e. each cell is approximately 1 mm x 1 mm. The size and number of grids 2 on a single microscope slide 1 may vary depending on the amount of material that needs to be transferred. For the transfer of relatively large  
10 sample amounts, the grids 2 can be made correspondingly larger so that the individual cells of the grid 2 can hold sufficient material.

After spotting, the pre-gridded slides 1 can be used in further analysis stages which may require the  
15 slides 1 to withstand extreme temperatures. The pre-gridded slides 1 can preferably withstand repeated freezing, including temperatures down to -20°C and repeated heating, up to 96°C over prolonged periods of time. The slides 1 are also preferably resistant to  
20 corrosive chemicals and reagents.

The grids 2 have also been shown not to interfere with scanning of the glass slides 1 to detect  
fluorescent dyes, which is usually one of the final stages of spotted material analysis.

25 Preferably, the printed grids can be removed from the glass microscope/arraying slides 1, after transfer of material has occurred.

Claims

5 1. A microscope slide in combination with a self-adhesive label, said microscope slide having a front face upon which, in use, a sample to be analysed is deposited, and a rear face, wherein:

10 said label comprises indicia means so that when said label is attached, in use, to the rear face of said microscope slide, said indicia means is visible when viewed through said front face of said microscope slide.

15 2. The combination as claimed in claim 1, wherein said indicia means comprises one or more alpha-numeric grids.

20 3. The combination as claimed in claim 2, wherein the characters forming said one or more alpha-numeric grids are printed as a mirror image of conventional alpha-numerics so that when viewed in a mirror numbers will appear as 0, 1, 2, 3 ... n and characters will appear as A, B, C ... Z.

25 4. The combination as claimed in claim 2 or 3, wherein said alpha-numeric grid comprises at least 96 cells.

30 5. An adhesive label for assisting the spotting of a microscope slide, said label having on one side an adhesive layer and on an opposed side a grid together with mirror images of alpha-numeric characters.

6. A method of transferring DNA samples from a microtitre plate to a microscope slide, comprising the steps of:

35 providing a microtitre plate with a plurality of DNA samples arranged in an array of samples;  
providing a microscope slide;  
attaching a pre-printed label having at least one

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grid to said microscope slide; and

transferring DNA material from said microtitre plate to said microscope slide using the grid on said label as a guide.

5

7. A method of manually spotting a microscope slide, comprising the steps of:

attaching an adhesive gridded indicia means to said microscope slide; and

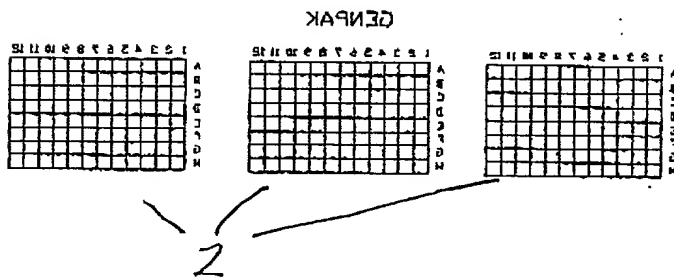
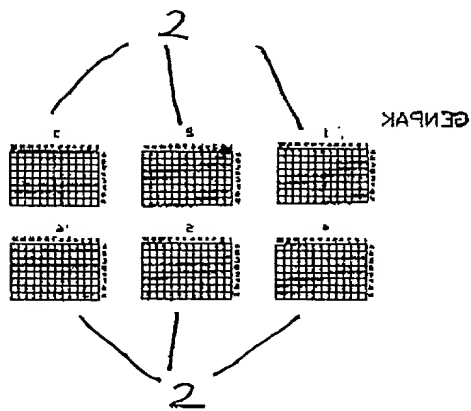
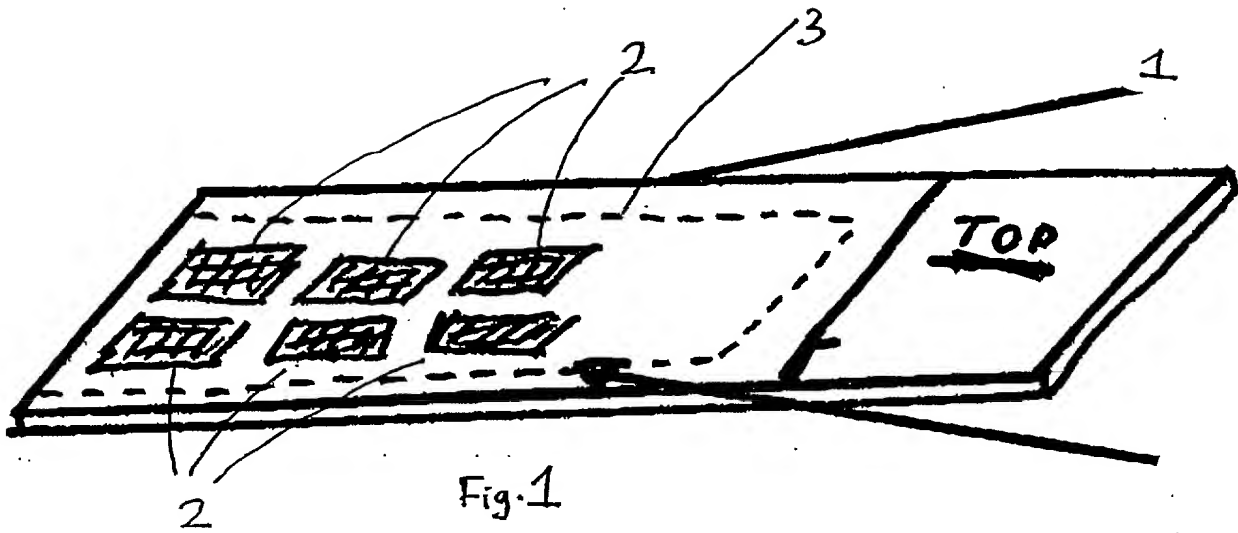
10           spotting said microscope slide using said indicia  
          means as a guide.

## ABSTRACT

### MICROARRAY SLIDES

- 5        An adhesive label 3 for attaching to a microscope slide 1 is disclosed. The label 3 may have one or more grids or arrays 2 provided on it to help an operator to manually spot a microscope slide 1.

[Fig. 1]



**DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY**

As a below named inventor, I hereby declare that my residence, post office address and citizenship are as stated below next to my name; I believe that I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention (Design, if applicable) entitled:

**Adhesive Label With Grid for Microscope Slide**

The specification of which (check one):

☒ is attached hereto.

☐ was filed on: As Application Serial No.:  
and (if applicable) was amended on:

☐ was filed on: As International (PCT) Application No.:  
and (if applicable) was amended on:

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment(s) referred to above. I acknowledge the duty to disclose information which is material to patentability as defined in *Title 37, Code of Federal Regulations, §1.56*. I hereby claim foreign priority benefits under *Title 35, United States Code §119* of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed.

<b>Prior Foreign Application(s)</b>			<b>Priority Claimed</b>	
<i>Number</i>	<i>Country</i>	<i>Day/Month/Year Filed</i>	<i>Yes</i>	<i>No</i>
<b>GB-9927590.1</b>	<b>United Kingdom</b>	<b>22 November 1999</b>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
			<input type="checkbox"/>	<input type="checkbox"/>

I hereby claim the benefit under *Title 35, United States Code, §120* of any United States application(s) or PCT international application(s) designating the United States of America listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in that/those prior application(s) in the manner provided by the first paragraph of *Title 35, United States Code, §112*, I acknowledge the duty to disclose information which is material to patentability as defined in *Title 37, Code of Federal Regulations, §1.56* which became available between the filing date of the prior application(s) and the national or PCT international filing date of this application:

<i>Application Number</i>	<i>Filing Date</i>	<i>Status-Patented, Pending or Abandoned</i>

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under *section 1001 of title 18 of the United States Code* and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

**POWER OF ATTORNEY:** I (We) hereby appoint as my (our) attorneys, with full powers of substitution and revocation, to prosecute this application and transact all business in the Patent and Trademark Office connected therewith: Everett G. Diederiks, Jr. (Reg. No. 33,323); Nicholas S. Whitelaw (Reg. No. 36,418) and Eric P. Robins (Reg. No. 45,047).

I (we) authorize my (our) attorneys to accept and follow instructions from regarding any matter related to the preparation, examination, grant and maintenance of this application, any continuation, continuation-in-part or divisional based thereon, and any patent resulting therefrom, until I (we) or my (our) assigns withdraw this authorization in writing.

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## DECLARATION FOR PATENT APPLICATION AND APPOINTMENT OF ATTORNEY

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